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		Nd (wt%)	Pr (wt%)	Dy (wt%)	Nd Pr Dy TOTAL R B Al Co Cu Fe (wt%) (wt%) (wt%) (wt%) (wt%) (wt%) (wt%) (wt%)	B (wt%)	Al (wt%)	Co (wt%)	Cu (wt%)	Fe (wt%)	MIXTURE	REMARKS
EYAMDIE 1	LOW R ALLOY	26.4	5.5	l	31.9	1.06	0.2	1	,	bal.	95	HEAVY RARE EARTH
	HIGH R ALLOY	î	l	60.2	60.2	ı	0.2	10.2	1.4	bal.	2	ELEMEN (Dy) CONTAINED IN HIGH R ALLOY
CYAMBIE	LOW R ALLOY	25.3	5.7		31.0	1.12	0.2	ı	1	bal.	06	HEAVY RARE EARTH
	HIGH R ALLOY	29.2	0.1	30.3	59.6	·	0.2	5.0	0.7	bal.	10	ELEMEN I (DY) CON I AINED IN HIGH R ALLOY
COMPARATIVE	LOW R ALLOY	22.0	5.8	3.4	31.2	1.12	0.2	ı		bal.	06	HEAVY RARE EARTH
EXAMPLE 1	HIGH R ALLOY	29.0	0.2	I	29.2	. 1	0.2	5.0	0.7	bal.	10	ELEMENT (Dy) CONTAINED IN LOW R ALLOY
COMPARATIVE	LOW R ALLOY	24.1	5.5	3.2	32.8	1.06	0.2	ı	1	bal.	95	HEAVY RARE EARTH
EXAMPLE 2	HIGH R ALLOY	9.69	0.2	1	59.8	. 1	0.2	10.2	1.4	bal.	5	ELEMENT (DY) CONTAINED IN LOW R ALLOY

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	PN	P	Dy	TOTAL R	В	A	ပိ	ŋ	Fe	Ŗ	HcJ
	(wt%)	(wt%) (wt%) (wt%)	(wt%)	(wt%)	(wt%) (wt%) (wt%) (wt%)	(wt%)	(wt%)	(wt%)	(wt%)	(kG)) (kG) (kOe)
EXAMPLE 1	25.1	5.2	3.0	33.3	1.0	0.2	0.5	0.1	bal.	12.90 23.09	23.09
EXAMPLE 2	25.7	5.1	3.0	33.8	1.0 0.2		0.5	0.1	bal. 12.78 23.12	12.78	23.12
COMPARATIVE EXAMPLE 1	25.6	5.2	3.1	33.9	1.0	0.2	0.5	0.1	bal.	12.51 23.18	23.18
COMPARATIVE EXAMPLE 2	25.9	5.2	3.0	34.1	1.0	0.2	0.5	0.1	0.1 bal. 12.50 23.17	12.50	23.17

FIG. 3A

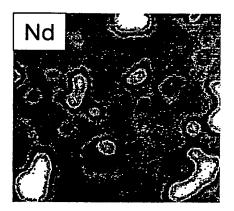


FIG. 3B

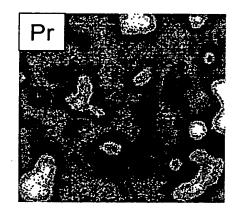


FIG. 3C

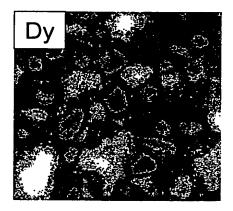
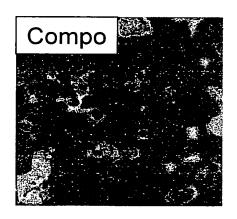


FIG. 3D



_10μm

FIG. 4A

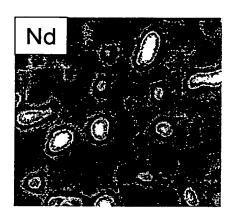


FIG. 4B

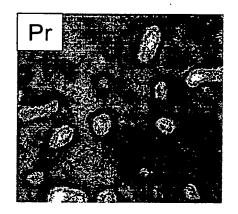


FIG. 4C

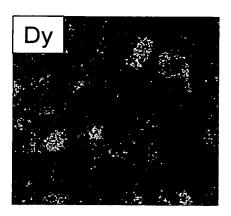
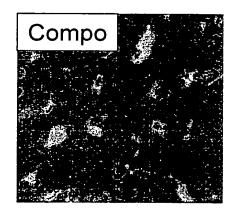


FIG. 4D



10μm

	AVE(X)	Α	AVE(X)/Y	(X/Y) min	(X/Y) max	AVE(X)/Y $(X/Y)min$ $(X/Y)max$ $(X/Y)max/(X/Y)min$
EXAMPLE 1	7.58	9.01	0.84	0.12	1.43	11.92
EXAMPLE 2	8.08	8.88	0.91	0.15	1.33	8.87
COMPARATIVE EXAMPLE 1	10.14	9.14	1.11	1.01	1.25	1.24
COMPARATIVE EXAMPLE 2	10.21	8.80	1.16	1.05	1.27	1.21

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	PΝ	Pr	Dy	Dy TOTAL R	В	A	Co	Cu	Fe	ğ	Hc
	(wt%) (wt%)	(wt%)	(wt%)	(wt%) (wt%) (wt%) (wt%) (wt%) (wt%) (wt%) (kG) (kG)	(wt%)	(wt%)	(wt%)	(wt%)	(wt%)	(kG)	(k0e)
EXAMPLE 1 25.1	25.1	5.2	3.0	33.3	1.0	0.2	0.5	0.1	bal.	12.90	23.09
EXAMPLE 3 25.0	25.0	5.2	3.0	33.2	1.0	0.2	0.5	0.1	bal.	12.91 22.83	22.83
EXAMPLE 4 25.4	25.4	5.1	3.1	33.6	1.0	0.2	0.5	0.1	bal.	12.89 22.22	22.22
EXAMPLE 5 25.1	25.1	5.2	3.1	33.4	1.0	0.2	0.5	0.1	bal.	13.04 21.14	21.14

FIG. (

	AVE(X)	>	AVE(X)/Y	(X/Y) min	(X/Y) max	AVE(X)/Y $(X/Y)min$ $(X/Y)max$ $(X/Y)max/(X/Y)min$	
EXAMPLE 1	7.58	9.01	0.84	0.12	1.43	11.92	
EXAMPLE 3	7.50	9.04	0.83	0.22	1.32	6.00	
EXAMPLE 4	7.87	9.22	98.0	0.18	1.37	7.61	•
EXAMPLE 5	8.35	9.27	0.89	0.16	1.53	9.56	

FIG. 8

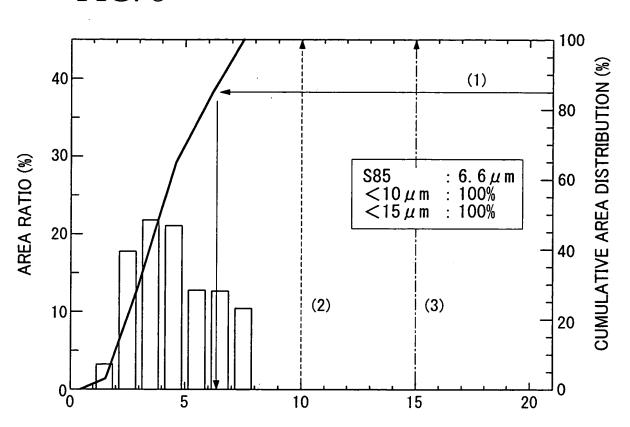


FIG. 9

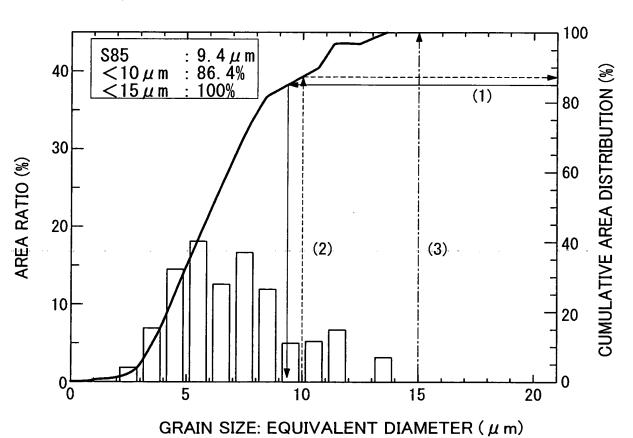


FIG. 10

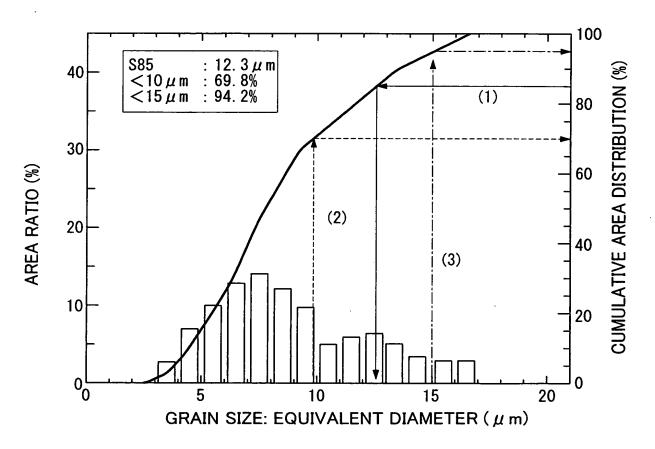
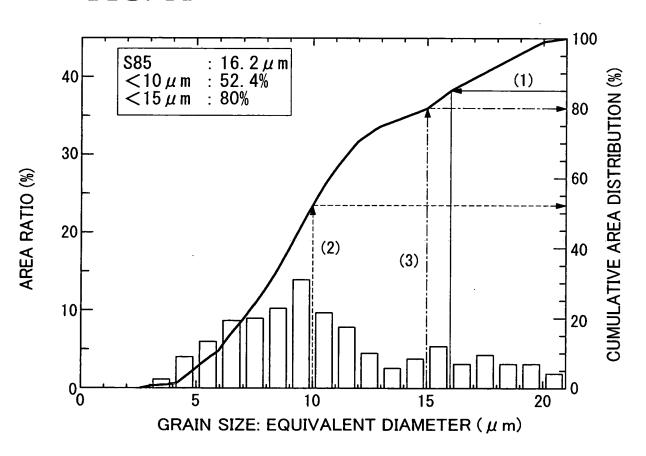


FIG. 11



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	wt%	" Dy (wt%	 	B (wt%) 1.06	AI (wt%)	Co (wt%)	Cu (wt%)		MIXTURE RATIO 95	REMARKS HEAVY RARE EARTH ELEMENT (Dy) CONTAINED IN HIGH R ALLOY AND IN
HIGH R ALLOY 46.0 46.0 LOW R ALLOY 29.4 - 2.2 31.6	46.0			1.06	0.2	10.0	2.0	bal.	95	LOW R ALLOY HEAVY RARE EARTH ELEMENT (Dy) CONTAINED
HIGH R ALLOY 46.0 46.0	46.0			1	0.2	10.0	2.0	bal.	5	IN HIGH R ALLOY AND IN LOW R ALLOY
LOW R ALLOY 22.4 - 7.1 29.5	7.1	29.5		1.12	0.2	ı	1	bal.	06	HEAVY RARE EARTH
HIGH R ALLOY 59.0 59.0	1	59.0		1	0.2	5.0	1.0	bal.	10	IN LOW R ALLOY
LOW R ALLOY 25.0 - 4.0 29.0	4.0	29.0		1.28	0.2	ŧ	1	bal.	80	HEAVY RARE EARTH ELEMENT (Dy) CONTAINED
HIGH R ALLOY 33.5 6.0 6.5 46.0	6.5	46.0		1	0.2	2.5	0.5	bal.	20	IN HIGH R ALLOY AND IN LOW R ALLOY

FIG. 13

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_	PN	Pr	Ο̈́	TOTAL R	В	₹	ပိ	Cu	H e	à	HcJ
(wt%) (wt%)	(wt%	<u></u>	(wt%)	(wt%) (wt%) (wt%) (wt%) (wt%) (wt%) (wt%)	(wt%)	(wt%)	(wt%)	(wt%)	(wt%)	(kG)	(k0e)
EXAMPLE 6 26.0 -	ı		6.2	32.2	1.0	0.2	0.5	0.1	bal.	12.60	25.00
EXAMPLE 7 27.8 -	I		4.4	32.2	1.0	0.2	0.5	0.1	bal.	13.00	23.62
25.9 –	ļ		6.3	32.2	1.0	0.2	0.5	0.1	bal.	12.31	25.00
26.6 1.2	1.2		4.5	32.3	1.0	0.2	0.5	0.1	bal.	12.60	23.60

FIG. 14A

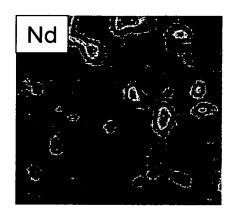


FIG. 14B

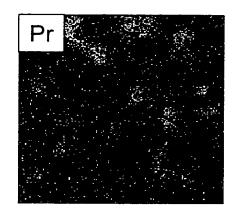


FIG. 14C

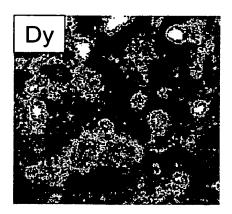
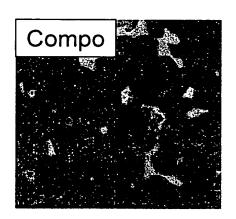


FIG. 14D



10μm

FIG. 15A

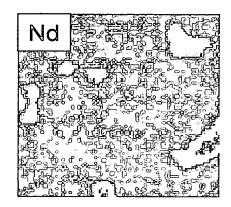


FIG. 15B

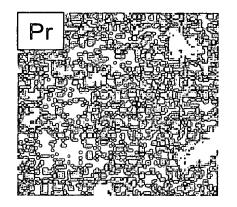


FIG. 15C

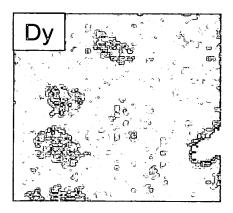
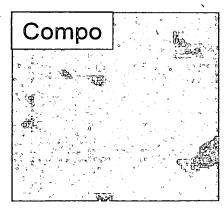


FIG. 15D



10μm

	AVE(X)	>	AVE(X) /Y	(X/Y) min	(X/Y) max	AVE(X) / Y (X/Y) min (X/Y) max (X/Y) min
EXAMPLE 6	16.54	19.25	0.85	0.40	1.04	2.60
EXAMPLE 7	13.14	13.66	0.96	0.51	1.12	2.20
COMPARATIVE EXAMPLE 3	20.74	19.57	1.06	0.88	1.31	1.49
COMPARATIVE EXAMPLE 4	15.70	14.98	1.05	0.73	1.33	1.82

<15 μ m (%) 100 88.1 75.1 69.0 <10 µ m (%) 64.6 50.4 24.6 32.1 S85 (\(m \)) 14.6 16.3 12.1 S50 (\pi m) 12.48 10.37 9.90 COMPARATIVE EXAMPLE 3 COMPARATIVE EXAMPLE 4 **EXAMPLE 6 EXAMPLE 7**

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		<u> </u>	-		Ι -			S		·		
BEMADKS		HEAVY RARE	ELEMENT (Dy)	CONTAINED IN HIGH R ALLOY	HEAVY RARE	ELEMENT (Dy)	CONTAINED IN HIGH R ALLOY	AT 30% OR LESS BY WEIGHT	HEAVY RARE	ELEMENT (Dy)	CONTAINED IN LOW R ALLOY	
MIXTURE	RATIO	75	20	5	09	31	7	2	09	31	7	2
Fe	(wt%)	bal.	bal.	bal.	bal.	bal.	bal.	bal.	bal.	bal.	bal.	bal.
Ω	(wt%)	ı	ı	1.4	ı	١	0.7	1.4	I	ł	0.7	1.4
ပိ	(wt%) (wt%) (wt%) (wt%)	1	1	10.0	1	ı	5.0	10.0	t	ı	5.0	10.0
₹	(wt%)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
8	(wt%)	1.06	1.06	•	1.12	1.06	ı	ı	1.12	1.06	. 1	I
Dy TOTAL R	(wt%)	32.5	0.0	0.09	32.0	32.5	0.09	0.09	32.0	32.6	0.09	0.09
۵	(wt%)	ı	1	0.09	ı	7.5	ı	44.0	1	9.7	ŀ	1
ď	(wt%) (wt%)	5.6	5.6	I	5.7	5.4	ı	i	5.7	5.4	-	ı
PZ	(wt%)	26.9	29.9	1	26.3	19.6	0.09	16.0	26.3	17.5	0.09	0.09
		LOW R ALLOY	LOW R ALLOY	HIGH R ALLOY	LOW R ALLOY	LOW R ALLOY	HIGH R ALLOY	HIGH R ALLOY	LOW R ALLOY	LOW R ALLOY	HIGH R ALLOY	HIGH R ALLOY
			EXAMPLE 8			COMPARATIVE	EXAMPLE 5			COMPARATIVE	EXAMPLE 6	,

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	PN	Pr	Dy	Dy TOTAL R	В	A	ပိ	CO	Fe	Ŗ	HcJ
	(wt%)	(wt%) (wt%)	(wt%)	(wt%) (wt%) (wt%) (wt%) (wt%) (wt%) (wt%) (kG) (kG)	(wt%)	(wt%)	(wt%)	(wt%)	(wt%)	(kG)	(k0e)
EXAMPLE 8	26.2	5.3	3.0	34.5	1.0	0.2	0.5	0.1	bal.	bal. 12.68 23.68	23.68
COMPARATIVE EXAMPLE 5	26.2	5.1	3.2	34.5	0.1	0.2	0.5	0.1	bal.	12.65 22.60	22.60
COMPARATIVE EXAMPLE 6	26.3	5.1	3.0	34.4	1.0	0.2	0.5	0.1	bal.	bal. 12.66 22.44	22.44

FIG. 20A

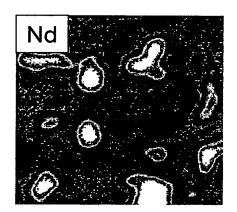


FIG. 20B

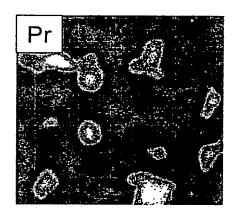


FIG. 20C

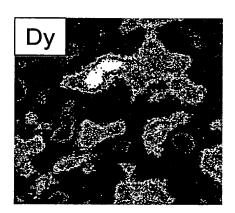
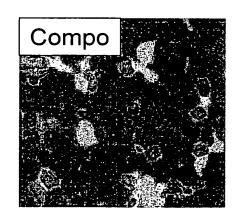


FIG. 20D



 $10\mu m$

FIG. 21A

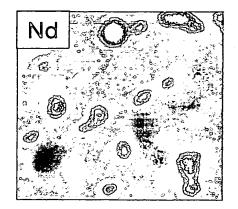


FIG. 21B

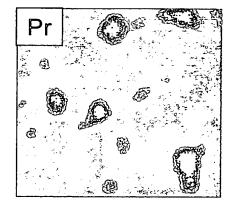


FIG. 21C

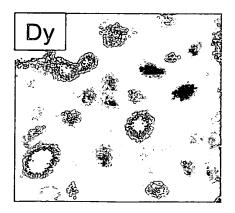
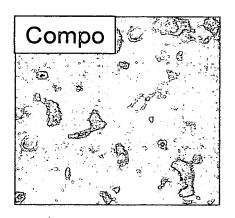


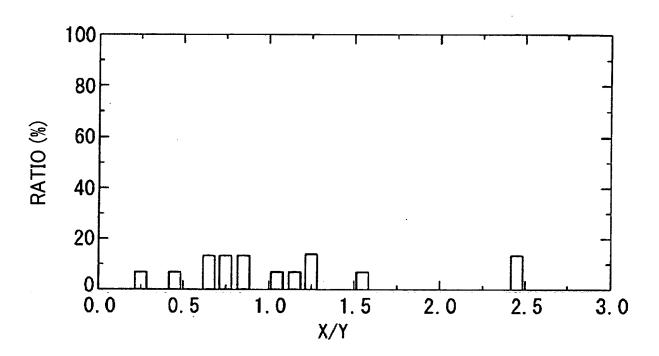
FIG. 21D

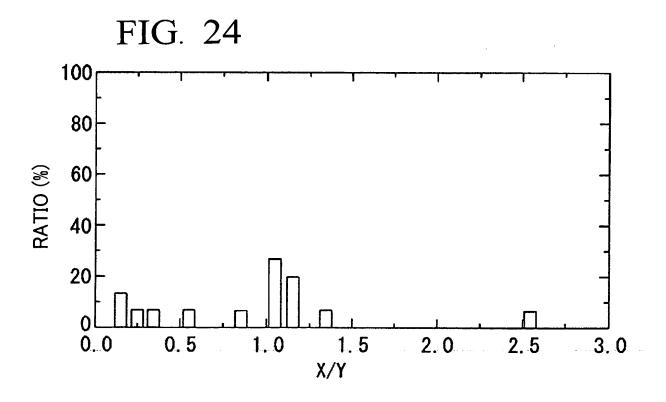


10μm

	AVE(X)	Υ	AVE(X) //Y	(X/Y) min	(X/Y) max	AVE(X) / Y (X/Y) min (X/Y) max (X/Y) min
EXAMPLE 8	7.40	8.70	0.85	0.20	1.31	6.55
COMPARATIVE EXAMPLE 5	9.70	8.75	1.1	0.21	2.43	11.57
COMPARATIVE EXAMPLE 6	8.25	8.72	0.95	0.16	2.60	16.25

FIG. 23





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		Nd (wt%)	Tb (wt%)	TOTAL R (wt%)	B (wt%)	Al (wt%)	Co (wt%)	Cu (wt%)	Fe (wt%)	(MIXTURE RATIO)
	LOW R ALLOY	30.3	ı	30.30	1.06	0.2	1		bal.	70
EXAMPLE 9	LOW R ALLOY	24.6	5.7	30.30	1.06	0.2	1	1	bal.	25
	HIGH R ALLOY	i	46.0	46.00		0.2	10.0	2.0	bal.	2
	LOW R ALLOY	30.3	I	30.30	1.06	0.2	ı	I	bal.	09
EXAMPLE10	LOW R ALLOY	26.3	4.0	30.30	1.06	0.2	,	ı	bal.	35
	HIGH R ALLOY	i	46.0	46.00	1	0.2	10.0	2.0	bal.	2
COMPARATIVE LOW R ALLOY	LOW R ALLOY	26.4	3.9	30.30	1.06	0.2	1	ı	bal.	95
EXAMPLE 7	HIGH R ALLOY	46.0	1	46.00	1	0.2	10.0	2.0	bal.	5
	LOW R ALLOY	27.1	3.1	30.20	1.06	0.2	ı	ı	bal.	55
COMPARATIVE EXAMPLE 8	LOW R ALLOY	25.3	5.0	30.30	1.06	0.2	1	ı	bal.	40
	HIGH R ALLOY	46.0	-	46.00	i	0.2	10.0	2.0	bal.	5

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	Nd (wt%) (1	Tb (wt%)	Tb TOTAL R B AI Co Cu Fe wt%) (wt%) (wt%) (wt%) (wt%)	B (wt%)	Al (wt%)	Co (wt%)	Cu (wt%)	Fe (wt%)	Br (kG)	HcJ (kOe)
EXAMPLE 9	27.3	3.7	31.0	1.0	0.2	0.5	0.1	bal.	13.45	24.1
EXAMPLE 10 27.3	27.3	3.7	31.0	1.0	0.2	0.5	0.1	bal.	bal. 13.43	24.2
COMPARATIVE EXAMPLE 7	27.3	3.7	31.0	1.0	0.2	0.5 0.1	0.1	bal.	13.19	24.4
COMPARATIVE EXAMPLE 8	27.3	3.7	31.0	1.0	0.2	0.5	0.1	bal.	bal. 13.20	24.7

	AVE(X) Y	\	AVE(X)/Y	(X/Y) min	AVE(X) / Y (X/Y) min (X/Y) max	(X/Y)max/(X/Y)min
EXAMPLE 9 10.47		11.90	0.88	0.21	1.23	5.86
EXAMPLE 10 11.18		11.90	0.94	0.56	1.54	2.75
COMPARATIVE EXAMPLE 7	14.52	11.90	1.22	0.95	1.42	1.49
COMPARATIVE EXAMPLE 8	15.59	11.90	1.31	1.04	1.37	1.32

<15 µ m (%) 98.9 100 100 100 <10 µ m (%) 75.3 90.2 100 100 S85 (μm) 10.96 5.85 6.90 8.51 S50 (µm) 7.67 4.49 5.08 COMPARATIVE EXAMPLE 8 COMPARATIVE **EXAMPLE 10 EXAMPLE 9 EXAMPLE 7**

FIG. 28

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		Nd (wt%)	Dy (wt%)	TOTAL R (wt%)	B (wt%)	Al (wt%)	Co (wt%)	Al Co Cu (wt%) (wt%)	Fe (wt%)	(MIXTURE RATIO)
EYAMDI E11	LOW R ALLOY	27.4	1	27.40	1.06	0.3	1	1	bal.	95
	HIGH R ALLOY	I	40.0	40.00	ı	0.3	10.0	2.0	bal.	5
EYAMDI E 1.0	LOW R ALLOY	34.7	1	34.70	1.06	0.2	1	ı	bal.	95
	HIGH R ALLOY	1	60.0	00.09	ı	0.2	30.0	2.8	bal.	5
COMPARATIVE	COMPARATIVE LOW R ALLOY	25.3	2.1	27.40	1.06	0.2	ı	1	bal.	95
EXAMPLE 9	HIGH R ALLOY 40.0	40.0	ı	40.00	I	0.2	10.0	2.0	bal.	5
COMPARATIVE	COMPARATIVE LOW R ALLOY	31.5	3.2	34.70	1.06	0.2	i	1	bal.	95
EXAMPLE 10	EXAMPLE 10 HIGH R ALLOY 60.0	0.09	ı	00:09	1	0.2	30.0	2.8	bal.	5

FIG. 30

	Nd (wt%)	Dy (wt%)	Nd Dy TOTAL R B AI Co Cu Fe Br HcJ (wt%) (wt%) (wt%) (wt%) (wt%) (wt%) (kG) (kG) (kOe)	B (wt%)	Al (wt%)	Co (wt%)	Cu (wt%)	Fe (wt%)	Br (kG)	HcJ (kOe)
EXAMPLE11	26.0	2.0	28.0	1.0	1.0 0.3	0.5	0.1	bal.	bal. 14.2 12.2	12.2
EXAMPLE12	33.0	3.0	36.0	1.0	1.0 0.2	1.5 0.14	0.14	bal.	bal. 12.1 25.3	25.3
COMPARATIVE EXAMPLE 9	26.0	2.0	28.0	1.0	1.0 0.2	0.5	0.1	bal.	bal. 13.8 12.6	12.6
COMPARATIVE EXAMPLE 10	33.0	3.0	36.0	1.0	0.2	1.5 0.14	0.14	bal.	bal. 11.7 25.5	25.5

	AVE(X) Y	Υ	AVE(X)/Y	(X/Y)min	(X/Y) max	AVE(X)/Y (X/Y)min (X/Y)max (X/Y)min
EXAMPLE 11	6.40	7.10	06:0	0.41	1.34	3.27
EXAMPLE 12	7.72	8.30	0.93	0.33	1.36	4.12
COMPARATIVE EXAMPLE 9	7.81	7.10	1.10	0.91	1.15	1.26
COMPARATIVE EXAMPLE 10	10.29	8.30	1.24	0.94	1.21	1.29